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August 15, 2011

Via Electronic Filing

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Re: *Ex Parte* Presentation
ET Docket No. 09-36

Dear Ms. Dortch:

The Alfred Mann Foundation for Scientific Research ("AMF") responds to an *ex parte* filing on July 15, 2011, by Engineers for the Integrity of Broadcast Auxiliary Services Spectrum ("EIBASS") regarding claims of potential interference from broadcast remote pickup ("RPU") stations to medical micropower network ("MMN") devices in the 451-457 MHz band.[1]

In its filing, EIBASS repeats the same baseless claims that have been discredited by evidence in the record and raises additional inaccurate or misleading allegations. First, EIBASS reiterates the Society of Broadcast Engineers, Inc.'s ("SBE") claim that the test reports submitted in the record did not specifically consider RPU operations.[2] Both EIBASS and SBE, however, ignore the larger and critical point that the Aerospace Corporation ("Aerospace") testing in fact examined various incumbent government and non-government signals, including land mobile radio (data and voice), ground radar, airborne radar, enhanced position location reporting system,

[1] *See Ex Parte* Comments of EIBASS (July 15, 2011) ("EIBASS Comments").

[2] *Id.* at 1.

and amateur television signals.[3] The interference potential resulting from these signals is at least comparable to, if not greater than, that resulting from RPU signals.[4]

Second, EIBASS concedes that the interference mitigation techniques for the master control unit ("MCU") "might work as claimed for the implant-to-MCU [signal] path," but then speculates that these techniques may be ineffective for the MCU-to-implant signal path because they are not performed by the implant itself.[5] This argument reflects a fundamental misunderstanding of the operation of MMN devices and other existing medical device radiocommunication ("MedRadio") devices. MedRadio implants, including MMN implants, operate in a lower radiofrequency noise environment (due to signal attenuation by the body) and are designed generally to transmit only in response to transmissions from the MCU.[6] By performing frequency monitoring and other interference mitigation techniques, the MCU can detect and address interfering signals before these signals can disrupt communications from the MCU to the implant. Consequently, the Commission's rules governing MedRadio devices require interference mitigation capabilities to be incorporated into only the MCU, not the implant,[7] and EIBASS offers no basis for applying a different rule to MMN devices.

Third, EIBASS reiterates that portable RPU stations are likely to operate near a medical facility or other location where MMN devices may operate and thus could cause harmful interference because of their close proximity.[8] EIBASS ignores that RPU stations occupy only a portion of one of four possible MMN channels and that harmful interference received on one channel does not prevent MMN devices from operating properly. As demonstrated by the Aerospace testing, if a channel becomes unavailable because of harmful interference from incumbent systems, MMN devices can select from the remaining three channels and switch to an available channel.[9]

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[3] *See* Letter from Cheryl A. Tritt, Counsel to AMF, to Marlene H. Dortch, Secretary, FCC, at 2 (July 7, 2011) ("July 7 AMF Letter").

[4] *Id.* at 2-3.

[5] *See* EIBASS Comments at 2-3.

[6] *See* 47 C.F.R. § 95.1209(b).

[7] *See* 47 C.F.R. § 95.628(a).

[8] *See* EIBASS Comments at 2.

[9] *See* July 7 AMF Letter at 2.

Fourth, EIBASS alleges that the Aerospace testing did not demonstrate the effectiveness of notching with respect to RPU signals, which could have wider bandwidths (up to 50 kHz or 100 kHz for remote broadcasts) than land mobile signals.[10] Internal AMF testing, however, has confirmed that the MCU can excise incumbent signals with bandwidths of up to 100 kHz. Even assuming that an incumbent signal is too wide to be excised and renders a channel unusable, the Aerospace testing demonstrated the effectiveness of the MCU's dynamic channel switching capability to allow the system to switch to an alternate, available channel under those circumstances.[11]

Finally, EIBASS claims that "AMF's definition of 'graceful shutdown' appears to be simply that no bogus commands would be generated."[12] In fact, EIBASS apparently made up this definition based upon its own misunderstanding of the technique. As AMF has stated, in the rare event that an MMN system is unable to implement a planned channel change *and* all other interference management measures are somehow unavailable or ineffective, the system can shut down gracefully and default to a fail-safe mode (*i.e.,* execute a pre-programmed, customized sequence of actions to allow the implant to operate independently of the MCU for a brief period) to protect the user during the time required for the system to select an available channel and reinitiate communications.[13] A more detailed description of this technique can be found in technical documents submitted in the record.[14] Contrary to EIBASS' unfounded speculation that the shutdown process "can never be graceful,"[15] this technique has been incorporated into other wireless medical devices that have been approved by the Food and Drug Administration ("FDA") for commercial sale, such as foot drop wireless systems that help stroke and other

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[10] *See* EIBASS Comments at 3.

[11] *See* Letter from Cheryl A. Tritt, Counsel to AMF, to Marlene H. Dortch, Secretary, FCC, at 5-6 (Apr. 8, 2011) ("April 8 AMF Letter").

[12] *See* EIBASS Comments at 3.

[13] *See, e.g.,* Letter from Cheryl A. Tritt, Counsel to AMF, to Marlene H. Dortch, Secretary, FCC, at 3 (Aug. 12, 2010); Letter from Cheryl A. Tritt, Counsel to AMF, to Marlene H. Dortch, Secretary, FCC, at 2 (June 8, 2011).

[14] *See* April 8 AMF Letter, Attachment 1 (attaching test reports and other technical documents, including AMF memorandum, dated Jan. 20, 2011, describing MMN graceful shutdown process).

[15] *See* EIBASS Comments at 3.

patients to walk with increased speed and improved balance.[16] Moreover, as AMF has noted, MMN devices have been designed to incorporate numerous interference mitigation techniques and safety measures, and these devices also must be reviewed and approved under the rigorous FDA qualification process designed to assess safety risks and patient benefits.[17]

Based upon the foregoing, AMF urges the Commission to act expeditiously to adopt rules to facilitate deployment of MMN systems that will offer invaluable health and public interest benefits for millions of disabled Americans.

Sincerely,

/s/ Cheryl A. Tritt
Cheryl A. Tritt
Counsel to the Alfred Mann Foundation for Scientific Research

cc: Julius Knapp
Geraldine Matise

[16] *See* Bioness.com, Bioness for Foot Drop, *What Is the NESS L300 Foot Drop System?, http://www.bioness.com/Bioness_for_Foot_Drop.php* (last visited Aug. 11, 2011).

[17] *See* June 8 AMF Letter at 3.